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UNFC Generic Specifications, Bridging, and Guidance Documents



Objectives

- What are UNFC Specifications?
- What are UNFC Bridging Documents?
- What are UNFC Guidelines?

UNFC structure

3 tier framework

- 1. Definitions: Classification framework
- 2. Specifications: Application rules
- 3. Guidelines: Non-mandatory guidance

Principles

Rules

Guidelines



UNFC Specifications

- Additional details (mandatory rules) as to how a resource classification system is to be applied, supplementing the framework definitions of that system.
- Generic specifications - Specifications that apply to the classification of products of a resource project using UNFC.
- Generic Specifications ensure clarity and comparability and are complementary to the source-specific requirements.

Specifications

- **Generic Specifications**
- Minerals
- Anthropogenic Resources
- Petroleum
- Renewable energy (generic)
- Geothermal Energy Resources
- Solar Energy Resources
- Wind Energy Resources
- Injection Projects for Geological Storage
- Bioenergy Resources
- Draft Specifications for
 - Nuclear Projects
 - Groundwater

Generic Specifications

- A. Use of numerical codes
- B. Bridging document
- C. Effective date
- D. Product
- E. Basis for estimate
- F. Reference point
- G. Classification of projects based on level of maturity
- H. Distinction between E1, E2 and E3
- I. Distinction between potentially produced quantities and undeveloped quantities
- J. Aggregation of quantities
- K. Environmental-socio-economic assumptions
- L. Evaluator qualifications
- M. Units and conversion factors
- N. Documentation

Bridging documents

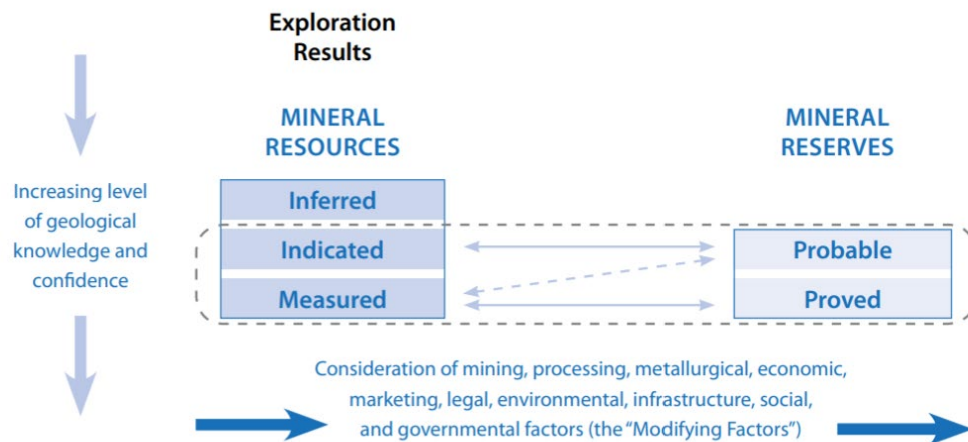
- Aligned System - A classification system that has been aligned with UNFC as demonstrated by the existence of a Bridging Document that has been endorsed by the Expert Group on Resource Management.
- A document that explains the relationship between UNFC and another classification system, including instructions and guidelines on how to classify estimates generated by application of that system using the UNFC Numerical Codes.



Bridging documents

- CRIRSCO for minerals
- PRMS for petroleum
- IAEA Red Book – Nuclear
- Russian Federation – petroleum
- China – minerals
- China – petroleum

CRIRSCO Bridging 1/2



CRIRSCO Template		UNFC-2009 "minimum" Categories			UNFC-2009 Class
Mineral Reserve	Proved	E1	F1	G1	Commercial Projects
	Probable			G2	
Mineral Resource	Measured	E2	F2	G1	Potentially Commercial Projects
	Indicated			G2	
	Inferred			G3	
Exploration Target		E3	F3	G4	Exploration Projects

CRIRSCO Bridging 2/2

	F1.1	F1.2	F1.3	F2.1	F2.2	F2.3	F3	F4
E1.1	1	2	3	4				
E1.2	1	2	3					
E2			4	4	5			
E3.1	12	12	12	12	12	12		
E3.2			6	6	6		8	
E3.3			7	7	7	7		11

		UNFC-2009 Sub-Classes	
Mineral Reserve	1	On Production	
	2	Approved for Development	
	3	Justified for Development	
Mineral Resource	4	Development Pending	
	5	Development On Hold	
Inventory (not defined in Template)	6	Development Unclassified	
	7	Development Not Viable	
	11	Additional Quantities in Place	
Exploration Target	8		
Special Cases	Classification not in Template	12	
	Less Common Mappings		

3 Way Bridging

UNFC-2009 Classification					CRIRSCO Template		NEA/IAEA Classification		
UNFC Classes and Sub-classes		UNFC Categories			CRIRSCO Classes and Sub-classes				
Class	Sub-Class	E	F	G	Class	Sub-Class	IAEA-NEA Categories		Status
Commercial Projects	On Production	1	1.1	1	Mineral Reserves	Proved	Reasonably Assured Resources (RAR)		Existing
				2		Probable			
	Approved for Development	1	1.2	1		Proved			Committed
				2		Probable			
	Justified for Development	1	1.3	1		Proved			Planned
				2		Probable			
Potentially Commercial Projects	Development Pending	2	2.1	1	Mineral Resources	Measured	Identified Resources	RAR	Prospective
				2		Indicated			
				3		Inferred			
	Development On Hold	2	2.2	1		Measured		RAR	
				2		Indicated			
				3		Inferred		IR*	
Non-commercial Projects	Development Unclassified	3.2	2.2	1,2,3	Inventory (not defined in Template)	Development Unclassified (not defined in Template)	Identified Resources RAR IR*		Unclassified
	Development Not Viable	3.3	2.3	1,2,3		Not Viable (not defined in Template)			Not Viable
Exploration Projects		3.2	3.1	4	Exploration Target		Undiscovered Resources	Prognosticated Resources	
		3.2	3.2, 3.3	4				Speculative Resources	

Mineral Specifications

- A. Overview
- A. Minerals project plan and definition
 - Prospecting/Exploration
 - Mining
 - Beneficiation
 - Processing
 - Decommissioning
 - Remediation.
- B. Minerals project lifetime
- C. Minerals project evaluation
- D. Project Classification
- E. Project reporting
 - Basis for the estimate
 - Effective date
 - Minerals product
 - Reference point
 - Aggregation of quantities
 - Use of Numerical Codes
 - Units and Conversion Factors
 - Documentation
 - Avoidance of double counting
 - National reporting

Anthropogenic Resource Specifications



Introduction

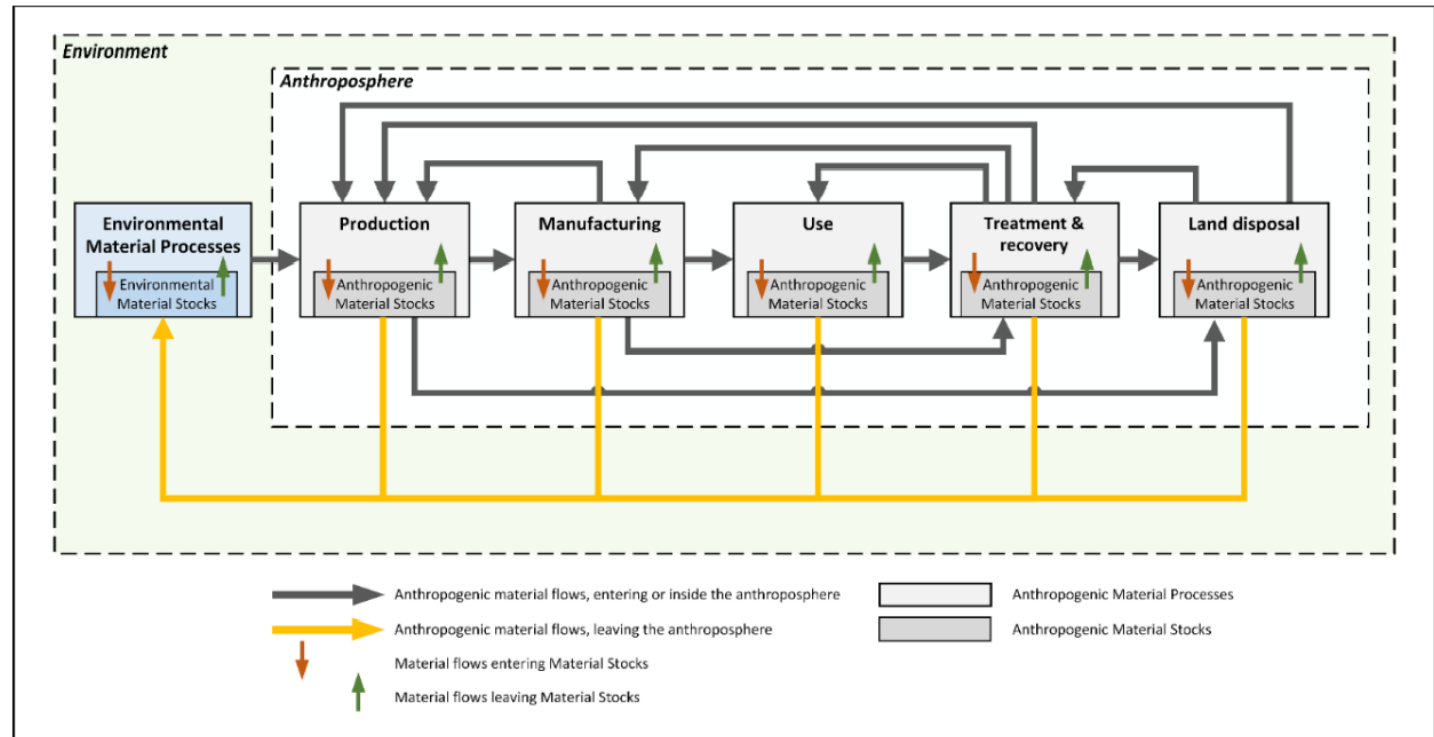


II. Terms and definitions

Anthropogenic Resources and associated terms



III. Specification in the context of anthropogenic resource





Guidance documents

- Guidance on Social and environmental considerations
 - Guidance document
 - Principles of resource classification
- Uranium and thorium
- Definition of a project
- Competency guidelines (Outside UNFC - being updated)

To Summarize

- Specifications are application rules.
- Bridging Documents relates UNFC with other systems.
- Guidelines provide non-mandatory instructions.

Thank you!

Hari Tulsidas
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